



City of Murphysboro

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The City of Murphysboro is soliciting bids for a new 4 position voice over IP radio console system to be installed in the Murphysboro City Hall building. Interested bidders should submit a sealed proposal to the city administrative office by 4:00 pm on Friday, March 20, 2015.

Bids may be mailed to:

City of Murphysboro
Radio Console Proposal
1101 Walnut Street
Murphysboro, IL 62966

Proposal should include:

- Total cost
- An itemized list of all equipment to be installed
- Specifications for computer equipment to be provided by the City of Murphysboro
- Amount of rack space needed for equipment
- The name of at least two public safety agencies with proposed equipment installed
- Location of nearest dealer/service technician for equipment
- Any exceptions to bid specifications

The radio console will connect to the following radio equipment:

- TX1 – Motorola XPR 4350 - Tone remote (Police Base)
- TX2 – Motorola MTR2000 – Tone remote (Fire Base)
- RX1 – Motorola Aux receiver for F2 on MTR2000 (FireCom)
- RX2 – Motorola Aux receiver for F3 on MTR2000 (Coalbelt)
- RX3 – Motorola Aux receiver for F4 on MTR2000 (Sheriff)
- RX4 – Motorola Aux receiver for F5 & F6 on MTR 2000 (Ambulance)
- TX3 – Motorola XPR 4350 – Tone remote (EMA/PW Base) – *(currently DC)*
- TX4 – Motorola XPR 4350 – Tone remote (CUSD 186 EMERG) – *(currently DC)*
- TX5 – Motorola XPR 4350 – Tone remote
- TX6 – Motorola XPR 4350 – Tone remote
- TX7 – Motorola XPR 4350 – Tone Remote
- TX8 – Motorola CMD1250 – Tone Remote (MABAS)
- TX9 – Motorola Radius – Tone Remote (39.5 Lo Band) – *(currently DC)*
- TX10 – Motorola Astro (Starcom)
- RX5 – Motorola Aux receiver (ISPERN)
- RX6 – Motorola Aux receiver (IREACH)

The City of Murphysboro will provide:

- Removal and disposal of all existing console equipment
- Furniture/cabinetry for console equipment
- Computers and monitors which meet or exceed the specifications of the console vendor.
- Installation of monitors & pc workstations
- Dedicated Cat 5E cabling from dispatch positions to main radio closet
- Reinstallation of all existing transmitters and remotes into a new open rack
- Conversion of existing DC equipment to Tone remotes

Radio vendor to provide:

- Installation of console hardware / radio interface equipment in rack provided by the City of Murphysboro
- All hardware, equipment (minus computer and monitor) and software licensing for console positions
- 2 wire audio feed of all transmit/receive audio for each transmitter for existing digital audio recorder.
- Testing of console equipment
- Introduction/Training of personnel on new equipment

Description of product desired:

The City of Murphysboro is seeking a state-of-the-art IP based radio console to interface with its existing radio transmitters. The equipment will be replacing 5 Motorola Centracom II console positions. The new console will consist of four positions: Two positions utilizing a desktop PC will be installed in the 911 communications center and 2 positions utilizing a laptop and desktop PC will be installed in the Emergency Operations Center. **The vendor must be prepared to begin installation of the equipment no later than Monday, July 6, 2015**

The radio console shall have the following capabilities:

- The console shall be capable of generating Motorola Quick Call II and Plectron paging tones from pre-programmed buttons.
- To eliminate multiple entry of configuration information, the radio dispatch console solution shall obtain the conventional radio channel aliases, the conventional radio unit ids, and the conventional radio aliases from the radio system infrastructure.
- Must be capable of supporting Windows 7. Please indicate if windows 8 compatible
- Flexible and customizable GIU must provide multiple screen layouts to organize resources in way which meets the needs of the console user(s).
- The console positions must be connected directly to an IP network which supports communication with conventional radios and all other dispatch activity.
- Conventional radio channels shall be customizable with various controls, such as patch status, frequency select, coded/clear select, and individual volume control, based on user preferences.

- Per-channel controls must be configurable as fully or partially shown, or hidden to save space on the screen.
- Dispatchers shall be able to respond to miss calls by selecting an entry in the Activity Log
- The number of calls and call information displayed in the Activity Log shall be customizable.
- Console shall be capable of supporting the following Vocoder Algorithms: AMBE, IMBE, ACELP, G.728
- Console users shall be able to patch between trunked and/or conventional radios that are normally unable to communicate with each other
- Patched radio users with capable subscribers on capable radio networks shall see the ID or alias of the other patched radio(s), as opposed to that of the console.
- Patches must be automatically re-established if interrupted so the dispatcher can concentrate on continuing operations.
- In order to reduce errors when managing encrypted audio situations, indicators and alerts for dispatchers shall only be provided when the console mode does not match that of a received call; or when a patch or multi-select group is being set up between a mix of clear and secure channels.
- The console system shall not require configuration or performance management equipment separate from the radio network. The console system shall be configured and managed by the radio system's configuration manager, fault manager and performance reporting applications to provide a single point for configuring and managing the entire dispatch.
- Centrally made configurations changes shall be automatically distributed throughout the system in order to save time and effort for system administrators and technicians.
- The conventional radio system interface shall provide E&M and tone remote station control and support 4-wire analog connections.
- Each analog conventional hardware element shall support at least four analog channels
- The console dispatcher's audio inputs and outputs shall be 600 ohm, balanced and transformer coupled (except for microphone which shall be 2000 Ohm, balanced, and does not use a transformer)
- The speaker mounting options for the console shall include desktop, furniture mount, or wall mount
- The console system must support local auxiliary inputs and outputs (i.e. relay control)
- The status of auxiliary inputs and outputs shall be conveniently interpreted from the GUI with the use of familiar graphical icons, such as a door shown open or closed.
- The IP console server shall enable the console operators to control and monitor external devices such as doors and lights, from the console user interface.
- The dispatch consoles shall utilize IP-based connectivity to remote auxiliary control units, which may be physically located close to where they are needed, at any console site or RF site.
- The remote auxiliary control unit shall utilize output relays capable of switching 1A @ 24VDC or 1A @ 24VAC
- The remote auxiliary control unit shall be rack mountable in a standard 19 in rack and one rack unit high.
- The remote auxiliary control unit shall utilize input buffers which are capable of sensing a dry closure through 1000 feet or less (round trip) of 24 AWG wire
- The remote auxiliary control unit shall provide single pole Form A relay outputs.
- The dispatch consoles and remote auxiliary control units shall communicate with each other across the radio and console system's IP network.
- Each operator position shall be capable of supporting 160 resources and up to 60 simultaneous audio sessions.

- Each operator position shall be capable of supporting up to 60 simultaneous encryption/decryption sessions per secure capable console.
- Each operator position shall be capable of supporting up to 3 multi-select groups
- Each operator position shall be capable of up to 16 patch groups
- Each operator position shall be capable of at least 1 private call resource
- Each operator position shall be capable of up to 5 simultaneously active channel markers
- Each operator position shall be capable of up to 25 security groups
- Each operator position shall be capable of up to 8 speakers, 2 headset jacks and 1 desktop microphone.
- Each operator position shall be capable of up to 4 encryption algorithms
- Capable of wireline connection to State of Illinois Starcom radio network

The consoles must support the following console site link types:

- Fractional T1/E1
- Single T1/E1
- Multiple T1/E1s
- Redundant and non-redundant links
- IP site links

The conventional analog channel interfaces must support the following:

- Rack mountable (19 inch) 1 rack unit high
- T1R1, T2R2, T4R4, T8R8, T12R12, T14R14 channels
- Four RJ45 connector ports for interfacing to analog conventional base stations. Each port shall contain the following inputs and outputs:
 - 600 Ohm, balanced analog audio input (receive audio)
 - 600 Ohm, balanced analog audio output (transmit audio)
 - Input buffer – to detect carrier operated Relay closure in the station
 - 1 Amp, 24 VDC relay output – for relay keying of the station
- Can be configured to support AGC, DLM, or no input conditioning

The digital channel interface hardware must support the following:

- Rack mountable (19 inch) 1 rack unit high
- T1R1, T2R2, T4R4, T8R8, T12R12, T14R14
- V.24 to station or comparator
- No Digital Interface unit shall be required

The console hardware must support the following EMC Emissions & Immunity specifications:

- FCC part 15 Class A
- ICES-003
- EN55022 1998 + A1: 2001 + A2: 2003 (CISPR-22 Class A)
- EN55024 + A1:2001 + A2:2003
- EN61000-3-2 2000
- EN61000-3-3 1995 + A1:2001